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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/058,435	01/30/2002	Atsushi Ogawa	PW 0277033 H7620US	4292

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EXAMINER

GIESY, ADAM

ART UNIT	PAPER NUMBER
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2651

DATE MAILED: 03/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/058,435

Applicant(s)

OGAWA ET AL.

Examiner

Adam R. Giesy

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 January 2002.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-8 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 30 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.
 2. The abstract of the disclosure is objected to because on line 5, "filer" should be --filter--.
- Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 7 and 8 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 7 and 8 are drawn to a "program" *per se* as recited in the preamble and as such is non-statutory subject matter. See MPEP §2106.IV.B.1.a. Data structures not claimed as embodied in computer readable media are descriptive material *per se* and are not statutory because they are not capable of causing functional change in the computer. See, e.g. Warmerdam, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure *per se* held non-statutory). Such claimed data structures do not define any structural and functional interrelationships between the data structure and other claimed aspects of the invention, which permit the data structure's functionality to be realized. In contrast, a claimed **computer readable medium** encoded with a data structure defines structural and functional interrelationships between the data structure and the computer software and hardware components which permit the data structure's functionality to be realized, and is thus statutory. Similarly, computer

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programs claimed as computer listings *per se*, i.e., the descriptions or expressions of the programs are not physical “things.” They are neither computer components nor statutory processes, as they are not “acts” being performed. Such claimed computer programs do not define any structural and functional interrelationships between the computer program and other claimed elements of a computer, which permit the computer program's functionality to be realized.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ito et al. (Ito - US Pat. No. 5,315,402) in view of Ohta et al. (US Pat. No. 5,579,294).

Regarding claim 1, Ito discloses an information recording apparatus for recording information by radiating a Laser beam on a disc (Figure 14), comprising: a disc driver (element 26) for selectively executing a constant linear velocity mode of driving the disc at a constant linear velocity and a constant angular velocity mode of driving the disc at a constant angular velocity (see column 2, lines 23-33 and also column 8, lines 16-34); a laser optical system (Figure 14, element 25) for radiating a laser beam on the disc (see column 4, lines 64-67); and a controller (Figure 14, element 25a) for controlling the laser power of the laser beam radiated by said laser optical system, wherein said controller sets a response speed for changing the laser power toward the target value during recording in the constant angular velocity mode slower

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than a response speed for changing the laser power toward the target value during recording in the constant linear velocity mode (note that, in column 15, lines 18-54, during CAV operation the duty factor and hence the laser power is gradually increased, as contrasted with, in column 11, lines 31-40, that during CLV mode, the duty factor and hence laser power is maintained constant). Ito also discloses that the optimum laser power (read as target values) should be at a set level (see column 11, lines 33-37). Ito does not disclose that the controller detects a laser power of the laser beam radiated by said laser optical system and controls the laser power of the laser beam radiated by said laser optical system in such a manner that the detected laser power becomes equal to a target value of a laser power to be radiated.

Ohta discloses that a photo-detector (Figure 12a, element 22) is used to monitor the laser power (see column 10, lines 49-51) and that the output from the photo-detector is sent to the auto power control circuit (Figure 12a, element 23) which compared the monitored value of the laser power to a reference value and adjusts the laser power level (see column 10, lines 47-62).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the disclosures of Ito and Ohta, the motivation being in order to create an optical recording device that can record more accurately at a faster recording rate.

Regarding claim 2, Ito discloses all of the limitations of claim 1 as recited in the claim 1 rejection above and further that the information recording apparatus also comprises a target value setter for changing the target value in accordance with a linear velocity at a record position of the disc during recording in the constant angular velocity mode (see column 15, lines 45-54).

Regarding claim 3, Ito discloses all of the limitations of claim 1 as recited in the claim 1 rejection above and further that the disc driver drives the disc in the constant angular velocity

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mode during recording of the disc until the linear velocity at the record position reaches a predetermined velocity, and drives the disc in the constant linear velocity mode after the linear velocity reaches the predetermined velocity (see column 8, lines 15-54).

Regarding claim 4, Ito discloses an information recording apparatus (Figure 14) comprising: a disc driver (element 26) for selectively executing a constant linear velocity mode of driving a disc at a constant linear velocity and a constant angular velocity mode of driving the disc at a constant angular velocity, when information is recorded in the disc by radiating a laser beam on the disc (see column 2, lines 23-33 and also column 8, lines 16-34); and a laser optical system (Figure 14, element 25) for radiating a laser beam on the disc (see column 4, lines 64-67); and a controller (read as processor - Figure 14, element 25a) for controlling the laser power of the laser beam radiated by said laser optical system, wherein said controller sets a response speed for changing the laser power toward the target value during recording in the constant angular velocity mode slower than a response speed for changing the laser power toward the target value during recording in the constant linear velocity mode (note that, in column 15, lines 18-54, during CAV operation the duty factor and hence the laser power is gradually increased, as contrasted with, in column 11, lines 31-40, that during CLV mode, the duty factor and hence laser power is maintained constant). Ito also discloses that the optimum laser power (read as target values) should be at a set level (see column 11, lines 33-37). Ito does not disclose that there is or a processor provided with software for controlling the laser power of the laser beam radiated by said laser optical system in such a manner that the laser power detected with said detector becomes equal to a target value of a Laser power to be radiated.

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Ohta discloses that a photo-detector (Figure 12a, element 22) is used to monitor the laser power (see column 10, lines 49-51) and that the output from the photo-detector is sent to the auto power control circuit (Figure 12a, element 23) which compared the monitored value of the laser power to a reference value and adjusts the laser power level (see column 10, lines 47-62).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the disclosures of Ito and Ohta, the motivation being in order to create an optical recording device that can record more accurately at a faster recording rate.

7. Claims 5-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's admitted prior art (AAPA - page 2 lines 7-16 of applicant's specification) in view of Watanabe et al. (US Pat. No. 6,687,202).

Regarding claims 5 and 7, AAPA discloses a driving method for a recording medium, comprising the steps of: (a) judging a record start instruction for a disc (inherently suggested by page 2, line 7, recording method); (b) judging whether a record position is in a constant angular velocity area (inherently suggested by page 2, lines 10-12, when data is recorded in the disc on the inner circumference side); (c) instructing a constant angular velocity drive, if the record position is in the constant angular velocity area (inherently suggested by page 2, lines 10-12, CAV recording on inner side); (d) detecting a transition from the constant angular velocity area to a constant linear velocity area (inherently suggested by page 2, lines 9-10, when data is recorded in the disc on the outer circumference side); and (e) instructing a constant linear velocity drive, if the transition is detected (inherently suggested by page 2, lines 13-15, CLV recording on outer side).

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AAPA does not disclose steps (c) instructing a constant angular velocity drive **and setting a first servo gain**, if the record position is in the constant angular velocity area; and (e) instructing a constant linear velocity drive **and setting a second servo gain larger than the first servo gain**, if the transition is detected.

Watanabe et al. suggests instructing a constant angular velocity drive **and setting a first servo gain**, during constant angular velocity operation while transducing inner disc tracks (see col. 5, lines 41-58); and instructing a constant linear velocity drive **and setting a second servo gain larger than the first servo gain**, during constant linear velocity operation while transducing outer disc tracks (see col. 6, lines 43-59).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide steps (c) instructing a constant angular velocity drive and setting a first servo gain, if the record position is in the constant angular velocity area; and (e) instructing a constant linear velocity drive and setting a second servo gain larger than the first servo gain, if the transition is detected to AAPA since Watanabe et al. suggests providing first and second larger gains during respective CAV inner tracks and CLV outer tracks operations, the motivation being in order to create an optical recording device that can record more accurately while saving electricity (Watanabe et al., the Abstract).

It should be known that since independent claim 7 is drawn to non-statutory subject matter as recited in the 101 rejection above, claim 7 was reviewed as a method and therefore is rejected for the same reasons as claim 5.

Regarding claims 6 and 8, the combination of AAPA/Watanabe et al. discloses all of the limitations of claims 5 and 7 as discussed in the rejections of claims 5 and 7 above (respectively),

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and further discloses the step of (f) instructing a constant linear velocity drive and setting a second servo gain larger than the first servo gain if the record position is not in the constant angular velocity area (see the above explanation regarding servo gain during CLV outer tracks operation, i.e., not in the CAV area).

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. Chao et al. (US Pat. No. 6,711,107) discloses a laser control method for constant angular velocity recording

b. Tsukamura et al. (US Pat. No. 4,660,189) discloses an optical system that changes laser power during track changes.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Adam R. Giesy whose telephone number is (571) 272-7555. The examiner can normally be reached on 8:00am- 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David R. Hudspeth can be reached on (571) 272-7843. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ARG 2/11/2005


W. R. YOUNG
PRIMARY EXAMINER